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EDUCATION
Ph.D. Reservoir Engineering, University of California at Berkeley
M.S.   Reservoir Engineering/Hydrogeology, University of California at Berkeley
M.S.   Reservoir Engineering, Southwest Petroleum Inst., China
B.S. (Eqv.)   Reservoir Engineering, Daqing Petroleum Inst., China

RESEARCH INTERESTS
- Reservoir dynamics and simulation
- Mathematical modeling of flow and transport in geologic media
- Coupled processes of multiphase fluid flow, multicomponent chemicals transport, CO_2 flooding and sequestration, and heat transfer in EOR/IOR processes
- Fractured reservoir characterization
- Hydro-mechanical coupling of fluid flow and rock deformation
- Well testing analysis

WORKING EXPERIENCE

8/08-present	**Professor**, Dept. of Petroleum Engineering, Colorado School of Mines (CSM), Golden CO, USA
1/09-present	**Guest Scientist**, Earth Sciences Division (ESD), Lawrence Berkeley National Laboratory (LBNL), Berkeley, University of California, USA
3/95-12/08	**Staff Scientist**, Earth Sciences Division (ESD), Lawrence Berkeley National Laboratory (LBNL), Berkeley, University of California, USA
12/06-present	**Adjunct Professor**, College of Engineering, Peking University, Beijing, China
12/06-present	**Adjunct Professor**, College of Petroleum Engineering, Daqing Petroleum Inst., Daqing, China
5/90-3/95	**Senior Hydrogeologist**, consulting service and research in the area of groundwater resources with HydroGeoLogic, Inc., Herndon, VA, USA
3/85-5/90	**GSRA**, Earth Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, University of California, USA.

| 1/82- | **Petroleum Engineer**, reservoir simulation with |
| 2/85 | Petroleum Research Inst., Beijing, China |

| 10/76- | **Instructor**, reservoir engineering, Daqing Petroleum |
| 10/78 | Inst., Daqing, China |

JOURNAL PUBLICATIONS

1. Wu, Y. S., Ming Ye, and Edward Sudicky, "Fracture-Flow-Enhanced Matrix Diffusion in Solute Transport Through Fractured Porous Media," *Transport in Porous Media*, (accepted), 2009

2. Wu, Yu-Shu and Guan Qin, "A General Numerical Approach for Modeling Multiphase Flow and Transport in Fractured Porous Media," *Communications in Computational Physics*, Vol. 6, No. 1, pp.85-108, 2009

3. Pan, F., M. Ye, J. Zhu, Y.S. Wu, B.X. Hu, and Z. Yu., "Incorporating Layer- and Local-Scale Heterogeneities in Numerical Simulation of Unsaturated Flow and Tracer Transport," *Journal of Contaminant Hydrology*, 103, pp.194-205, 2009

4. Pan, F., M. Ye, J. Zhu, Y.S. Wu, B.X. Hu, and Z. Yu., "Numerical Evaluation of Uncertainty in Water Retention Parameters and Effect on Predictive Uncertainty," *Vadose Zone Journal,* 8, pp.158-166, 2009.

5. Wu, Yu-Shu and P. A. Forsyth, "Efficient Schemes for Reducing Numerical Dispersion in Modeling Multiphase Transport through Porous and Fractured Media," *Vadose Zone Journal*, Vol. 7, No. 1, pp. 340-349, 2008

6. Pan, Lehua, Jiming Jin, Norman Miller, Wu, Yu-Shu, and Gudmundur Bodvarsson, "Modeling Hydraulic Responses to Meteorological Forcing: From Canopy to Aquifer," *Vadose Zone Journal*, Vol. 7, No. 1, pp. 325-331, 2008

7. Wu, Yu-Shu, Guoping Lu, Keni Zhang, L. Pan, and G. S. Bodvarsson, "Analyzing Unsaturated Flow Patterns in Fractured Rock Using an Integrated Modeling Approach," *Hydrogeology Journal*, Vol. 15, pp.553-572, 2007

8. Ye, Ming, Feng Pan, Yu-Shu Wu, Bill Hu, Craig Shirley, and Zhongbo Yu, "Assessment of Radionuclide Transport Uncertainty in the Unsaturated Zone of Yucca Mountain," *Advances in Water Resources*, Vol. 30, pp.118-137, 2007

9. Wu, Y. S., "An Integrated Methodology for Characterizing Flow and Transport Processes in Fractured Rock," *Journal of China University of Geosciences,* Vol. 18, Special Issue, pp.110-111, 2007

10. Zhang, Keni, Yu-Shu Wu, James E. Houseworth, "Sensitivity Analysis of Hydrological Parameters in Modeling Flow And Transport in the Unsaturated Zone of Yucca Mountain," *Hydrogeology Journal*, Vol. 14, No. 8., pp. 1599-1619, 2006

11. Zhang, Keni, Yu-Shu Wu, and Lehua Pan, "Temporal Damping Effect of the Yucca Mountain Fractured Unsaturated Rock on Transient Infiltration Pulses," *Journal of Hydrology*, Vol. 327, pp.235-248, 2006

12. Wu, Yu-Shu, S. Mukhopadhyay, K. Zhang, and G. S. Bodvarsson, "A Mountain-Scale Thermal-Hydrologic Model for Simulating Fluid Flow and Heat Transfer in Unsaturated Fractured Rock," *Journal of Contaminant Hydrology,* Vol. 86, pp.128-159, 2006

13. Wu, Yu-Shu, Keni Zhang, and Hui-Hai Liu, "Estimating Large-Scale Fracture Permeability of Unsaturated Rock Using Barometric Pressure Data," *Vadose Zone Journal*, Vol. 5, pp.1129-1142, 2006

14. Song, Kao-Ping, Yu-Shu Wu, and Bing-Yu Ji, "A φ-Function Method for Estimating Residual Oil Saturation Distributions in Waterflooding Reservoirs," *Journal of Acta Petrolei Sinica,* Chinese Petroleum Society, Vol. 27, No. 3, pp.91-95, 2006

15. Wu, Y. S. and L. Pan, "An Analytical Solution for Transient Radial Flow through Unsaturated Fractured Porous media," *Water Resources Research*, Vol. 41, No.2, W02029, doi: 10.1029/2004WR003107, 2005

16. Wu, Y. S., L. Pan, and K. Pruess, "A Physically Based Approach for Modeling Multiphase Fracture-Matrix Interaction in Fractured Porous Media," *Advances in Water Resources*, Vol. 27, pp.875-887, 2004

17. Wu, Y. S. and J. Liu, "Integration of Perched Water and Chloride Data in Modeling Flow Processes within the Unsaturated Zone of Yucca Mountain, Nevada," *Journal of Hydraulic Research, International Association of Hydraulic Engineering and Research*, Vol. 42, pp.115-120, 2004

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19. Pan, L. Y. S. Wu, and K. Zhang, "Flow Diversion and Focusing in Unsaturated Fractured Tuffs at Yucca Mountain, Nevada," *Vadose Zone Journal*, Vol. 3, 233–246, 2004

20. Wu, Y. S., G. Lu, K. Zhang, and G. S. Bodvarsson, "A Mountain-Scale Model for Characterizing Unsaturated flow and Transport in Fractured Tuffs of Yucca Mountain," *Vadose Zone Journal*, Vol. 3, pp.796-805, 2004

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22. Wu, Y. S. and L. Pan, "Special Relative Permeability Functions with Analytical Solutions for Transient Flow into Unsaturated Rock Matrix," *Water Resources Research*, Vol.39, No. 4, pp.3-1–3-9, 2003

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Porous Rock," *International Journal of Rock Mechanics and Mining Sciences,* Vol. 39, pp.429-442, 2002

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41. Wu, Y. S., "A Virtual Node Method for Handling Wellbore Boundary Conditions in Modeling Multiphase Flow in Porous and Fractured Media," *Water Resources Research*, Vol. 36, No. 3, pp.807-814, 2000

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47. Wu, Y. S. and K. Pruess "A Numerical Method for Simulating Non-Newtonian Fluid Flow and Displacement in Porous Media", Vol. 21, *Advances in Water Resources*, pp.351-362, 1998

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64. Wu, Y. S., K. Pruess, and P.A. Witherspoon, "Displacement of a Newtonian Fluid by a Non-Newtonian Fluid in a Porous Media," Research Report, LBL-27412, Lawrence Berkeley laboratory; *Transport in Porous Media*, Vol. 6, pp.115-142, 1991

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75. Wu, Yu-Shu, "A Unified Numerical Framework Model for Simulating Flow, Transport, and Heat Transfer in Porous and Fractured Media," *Developments in Water Science* 52, Edited by Cass T. Miller, Matthew W. Farthing, William G. Gray, and George F. Pinder, Elsevier, 2004

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Mountain," *Characterization and Measurement of the Hydraulic Properties of Unsaturated Porous Media, edited by M. Th. Van Genuchten, Leij, F. J. and Wu, L.*, Published by the University of California, Riverside, pp.1537-1548, 1999

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84. Park, N. S., P. S. Huyakorn, Y. S. Wu, and M. D. Barcelo, "A Sharp-Interface Salt Water Intrusion Code for Layered Aquifer Systems," *Engineering Hydrology*, Edited by Chin Y. Kuo, San Francisco, CA, pp.1159-1164, 1993

SPE PAPERS

85. Wu, Y. S., B. Lai, and J. L. Miskimins, Simulation of Multiphase Non-Darcy Flow in Porous and Fractured Media, SPE-122612, to be presented at the 2009 SPE Annual Technical Conference and Exhibition held in New Orleans, Louisiana, USA 4-7 October 2009

86. Wu, Yu-Shu and Kenzi Kirasaki, "Conceptualization and Modeling of Flow and Transport Through Fault Zones," SPE-122456, presented at the 2009 SPE Latin American & Caribbean Petroleum Engineering Conference, held 31-MAY-09 to 03-JUN-09 in Cartagena, Colombia

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88. Wu, Yu-Shu and Baojun Bai, "Efficient Simulation for Low-Salinity Waterflooding in Porous and Fractured Reservoirs," SPE-118830, presented at the 2009 SPE Reservoir Simulation Symposium to be held in The Woodlands, Texas, USA, 2–4 February 2009

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95. Wu, Yu-Shu, Guoping Lu, Keni Zhang, and G. S. Bodvarsson, "An Integrated Modeling Approach for Characterizing Multiphase Flow, Chemical Transport, and Heat Transfer in Fractured Reservoirs, SPE-106996, presented at the SPE Europec/EAGE Annual Conference and Exhibition held in London, United Kingdom, 11–14 June 2007

96. Zhang, K, Christine Doughty, Yu-Shu Wu, and Karsten Pruess, Efficient Parallel Simulation of CO2 Geologic Sequestration in Saline Aquifers, SPE-106026, presented at *2007 SPE* Reservoir Simulation Symposium, Houston, TX, 26-28 February, 2007

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98. Kang, Zhijiang, Yu-Shu Wu, Jianglong Li, Yongchao Wu, Jie Zhang, and Guangfu Wang, "Modeling Multiphase Flow in Naturally Fractured Vuggy Petroleum Reservoirs," SPE-102356, presented at the SPE Annual Technical Conference and Exhibition, San Antonio, TX, USA, September 24-27, 2006

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101. Wu, Y. S., K. Pruess, and P.A. Witherspoon, "Flow and Displacement of Bingham Non-Newtonian Fluids in Porous Media," SPE 20051, presented at the 1990 SPE California Regional Meeting, Ventura, CA, April 1990

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